Waste Management

Transportation of Hazardous Materials

Transportation is a supporting element of numerous U.S. Department of Energy (DOE) programs. Most shipments are comprised of everyday materials including office supplies, building materials, tools and equipment. However, transport of some hazardous materials (including radioactive waste and material) is essential to support environmental management activities, research and development, production of radioisotopes for medical and research use, and national defense programs. Annually, DOE safely transports approximately 14,800 shipments of hazardous materials. This accounts for less than one percent of the national volume. Of that total number, roughly 4,500 shipments contain radioactive materials.

Vehicle containing low-level waste

Like many businesses, universities, hospitals, and utilities that also depend on transportation of hazardous materials, DOE is subject to U.S. Department of Transportation (DOT), Nuclear Regulatory Commission, and U.S. Environmental Protection Agency transportation regulations for non-defense shipments. These regulations cover packaging and transportation of hazardous materials on public highways, airways, and waterways. Shipments are also subject to applicable state, tribal, and local government requirements. To assure that all activities are conducted within regulatory guidelines, DOE established the National Transportation Program (NTP). The NTP oversees the: availability of safe, secure, and economical transport services; compliance with regulatory requirements; and, coordination of emergency preparedness activities. Needless to say, the NTP plays a key role in assuring that all transportation activities are conducted with a safe, responsible, and cost-effective approach.

Compliance

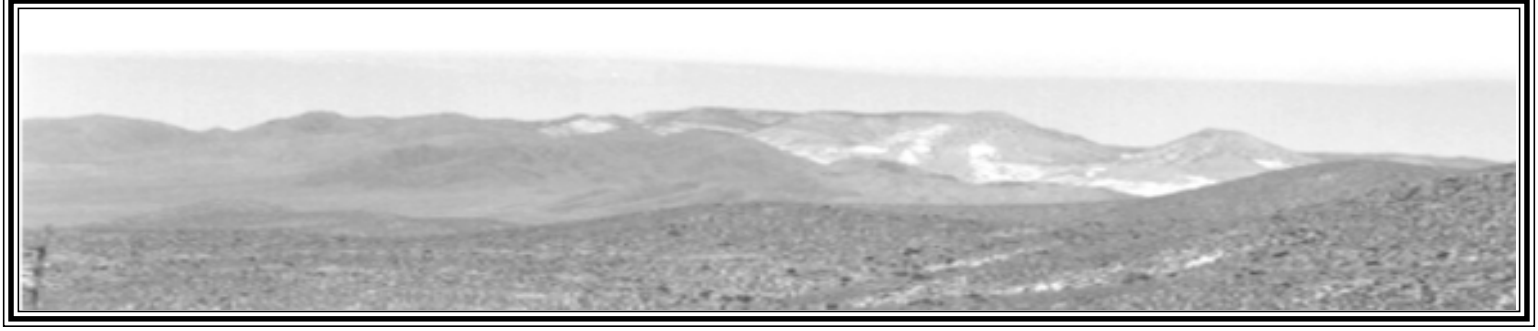
The DOT has primary responsibility for establishing standards for the safe transport of all hazardous materials in the United States. DOT regulations are comprehensive and include requirements that encompass a number of areas, such as: proper packaging; marking and labeling of packages or containers; appropriate placarding of transport vehicles; preparation of shipping papers, which include emergency response information; and the process for incident/accident reporting, and the emergency actions to be taken. The DOT has Federal Motor Carrier Safety Regulations concerning driving, parking, and routing of vehicles carrying hazardous materials, as well as driver training requirements. In addition, the DOT has regulations under the Federal Rail Safety Act which authorize the Federal Railroad Administration to oversee the safe rail transport of hazardous materials. Individual states also have regulatory authority governing the transportation of hazardous materials. In addition, states, tribes, and local governments can and do establish more stringent requirements for the transport of hazardous materials as long as they do not conflict with federal regulations or unreasonably impede commerce. The permitting agency for Nevada is the Nevada Highway Patrol.

Training

Transportation personnel who work with hazardous materials (hazmat) undergo extensive and recurring training. Workers are taught to recognize and identify hazardous materials and are trained in the specific functions they will perform. All hazmat workers are also required to receive training at least once every three years. This helps to ensure the sharpness of their skills and enables employees to keep current with changing regulations.

Packaging

The proper package design of containers is crucial to the safe shipment of hazardous materials. As the level of risk increases, the design requirements become more stringent. Also, package types are put through extensive and rigorous testing processes to gauge the integrity of the package in containing the material during transport.



Modes of Transport/Routes

Hazardous materials are shipped via land, sea, air, and by a combination of methods, known as intermodal transportation. Ground transportation is used to move the largest percentage of hazardous materials. A number of requirements exist for the transport of low-level radioactive waste, which is the type of hazardous material shipped to the Nevada Test Site for treatment, storage, and disposal. The DOE Nevada Operations Office (DOE/NV) ensures that the routes chosen by carriers minimize radiological risk. A variety of data on a transportation route are considered, including information on accident rates, transit time, population density and activities, and the day and time during which transport will occur.

Low-level waste en route to the Nevada Test Site

Public Involvement

The DOE/NV encourages participation and involvement by the public in fulfilling the Department's mission. There are a number of mechanisms available to interested stakeholders to accomplish this, including the Community Advisory Board for Nevada Test Site Programs and the Transportation Protocol Working Group. The Community Advisory Board is a formal group of volunteer, independent, nonpartisan members organized and dedicated to providing informed recommendations to DOE. The Protocol Working Group was established to enhance two-way communication and facilitate transportation planning among DOE, local, and county emergency response personnel. This highly specialized group meets on a periodic basis to discuss transportation matters of concern to the community. The public has the opportunity to voice its opinions in these meetings on such matters as routing and modes of transport.

Although not required to do so, the DOE/NV conducted an environmental assessment of intermodal transport at the request of stakeholders. This environmental assessment focused on the rail/truck method of shipping low-level waste to the Nevada Test Site and explored the potential environmental impacts and transportation risks of various intermodal transfer sites and their associated truck routes.

Summary

Each year approximately 300 million shipments of hazardous materials are safely transported through the United States for a wide array of uses including medical, agriculture, and scientific research. Given its enviable safety record, DOE continues to set the standard for excellence. Due to DOE oversight and strict adherence to all relevant regulations, no fatalities or serious injuries have occurred due to a release from hazardous materials or because of the nature of the cargo transported. As with all issues, including transportation, DOE/NV strives to find new ways to solicit input from stakeholders as part of its continuing effort to involve the public in its decision-making process.

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